

Fig. 1

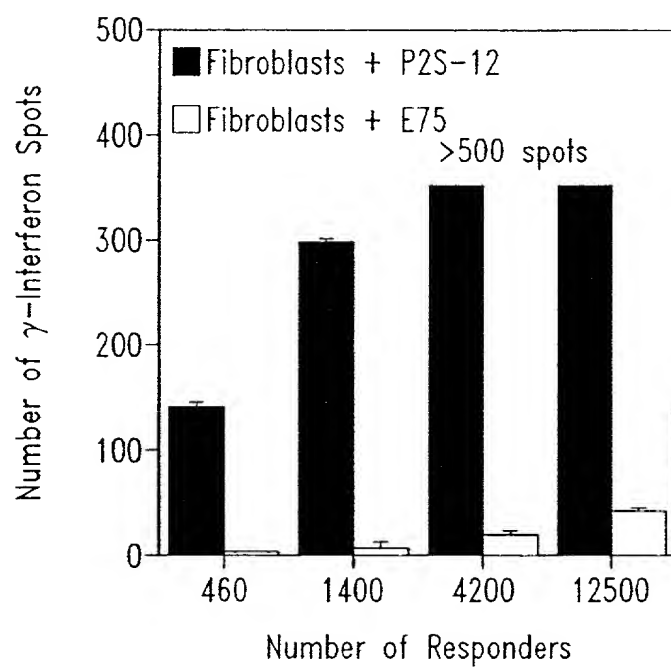


Fig. 2A

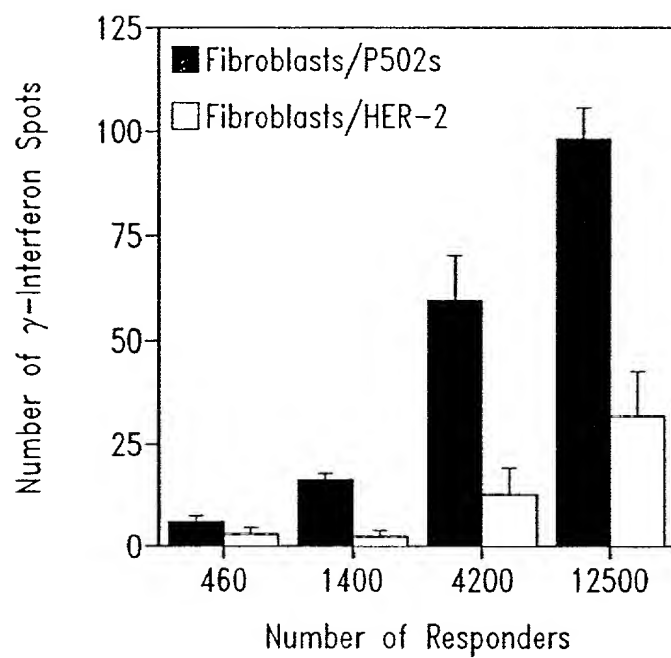


Fig. 2B

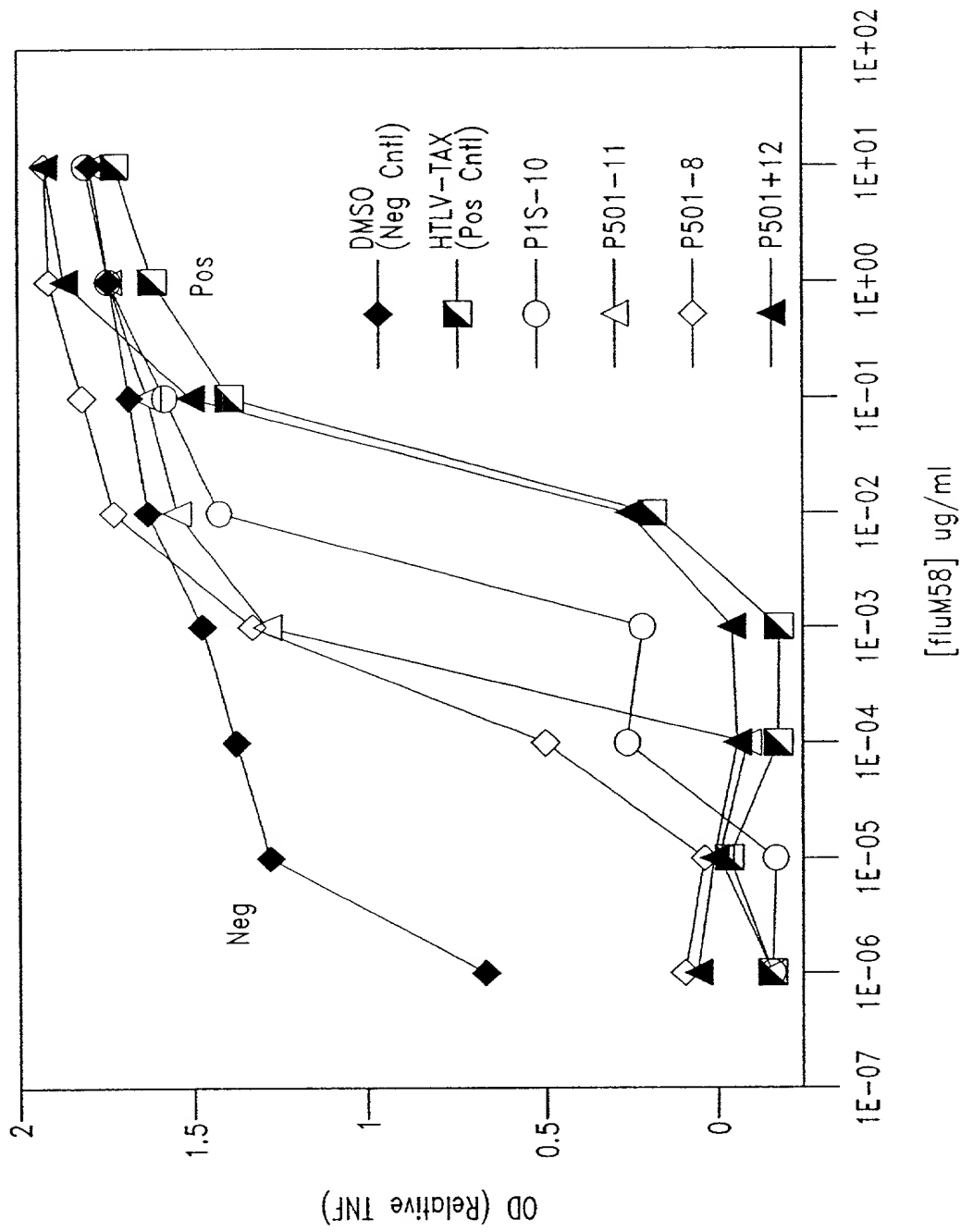


Fig. 3

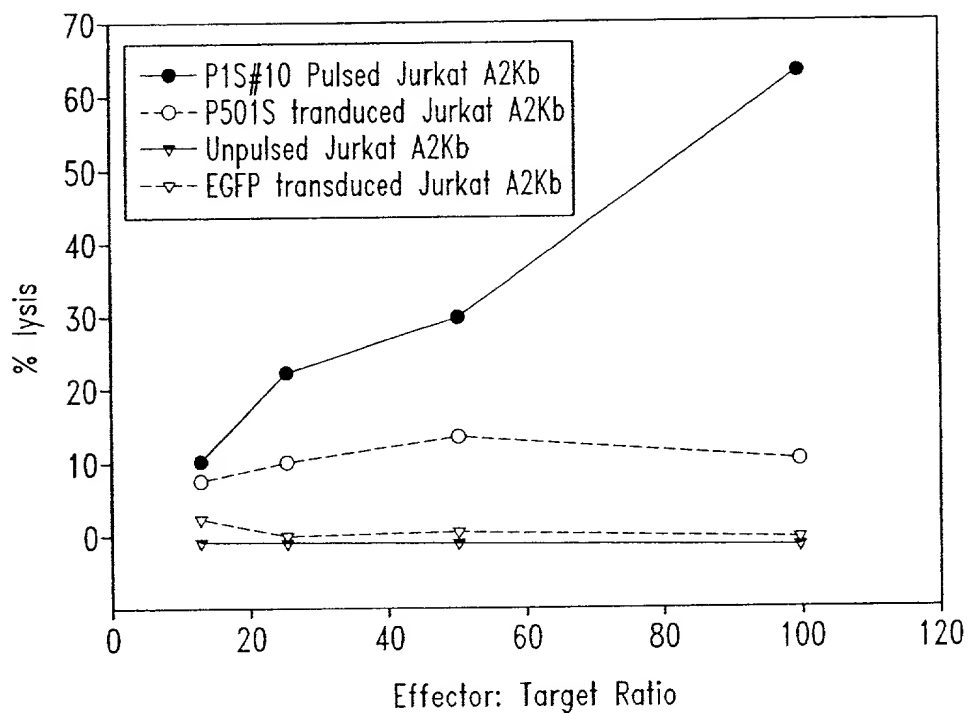


Fig. 4

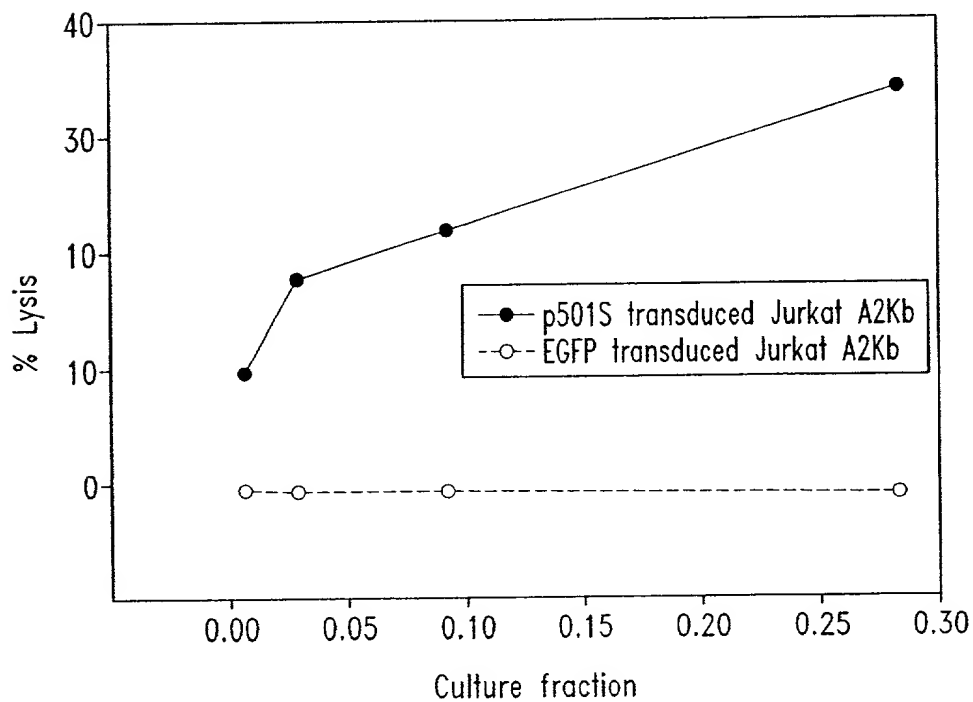


Fig. 5

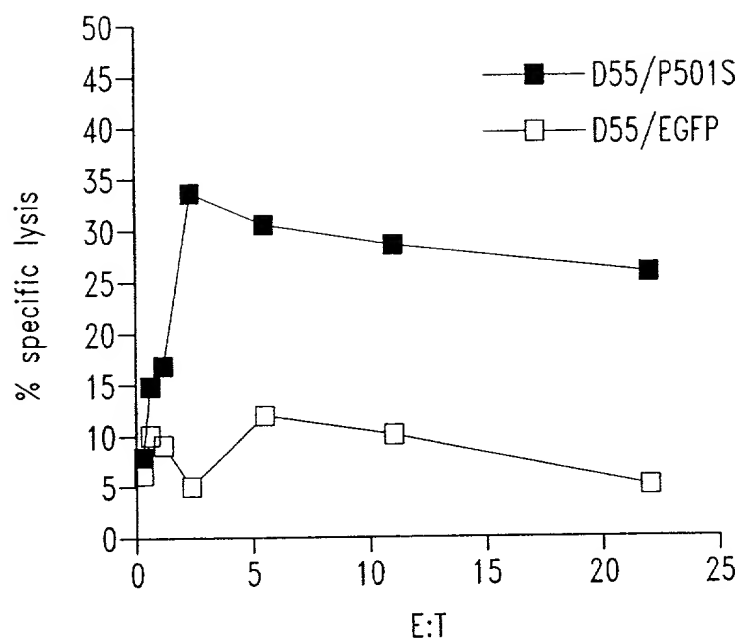


Fig. 6A

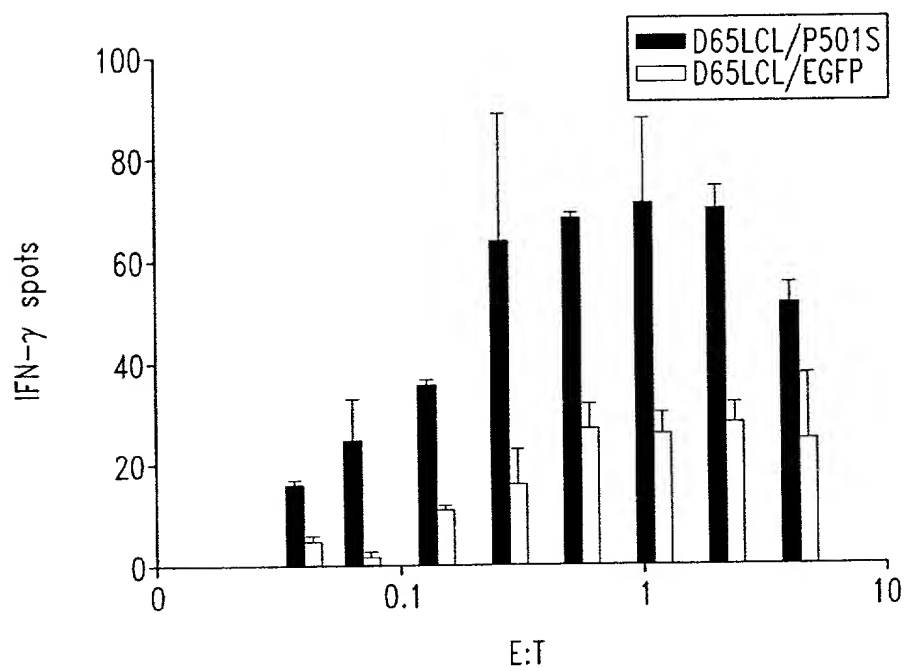
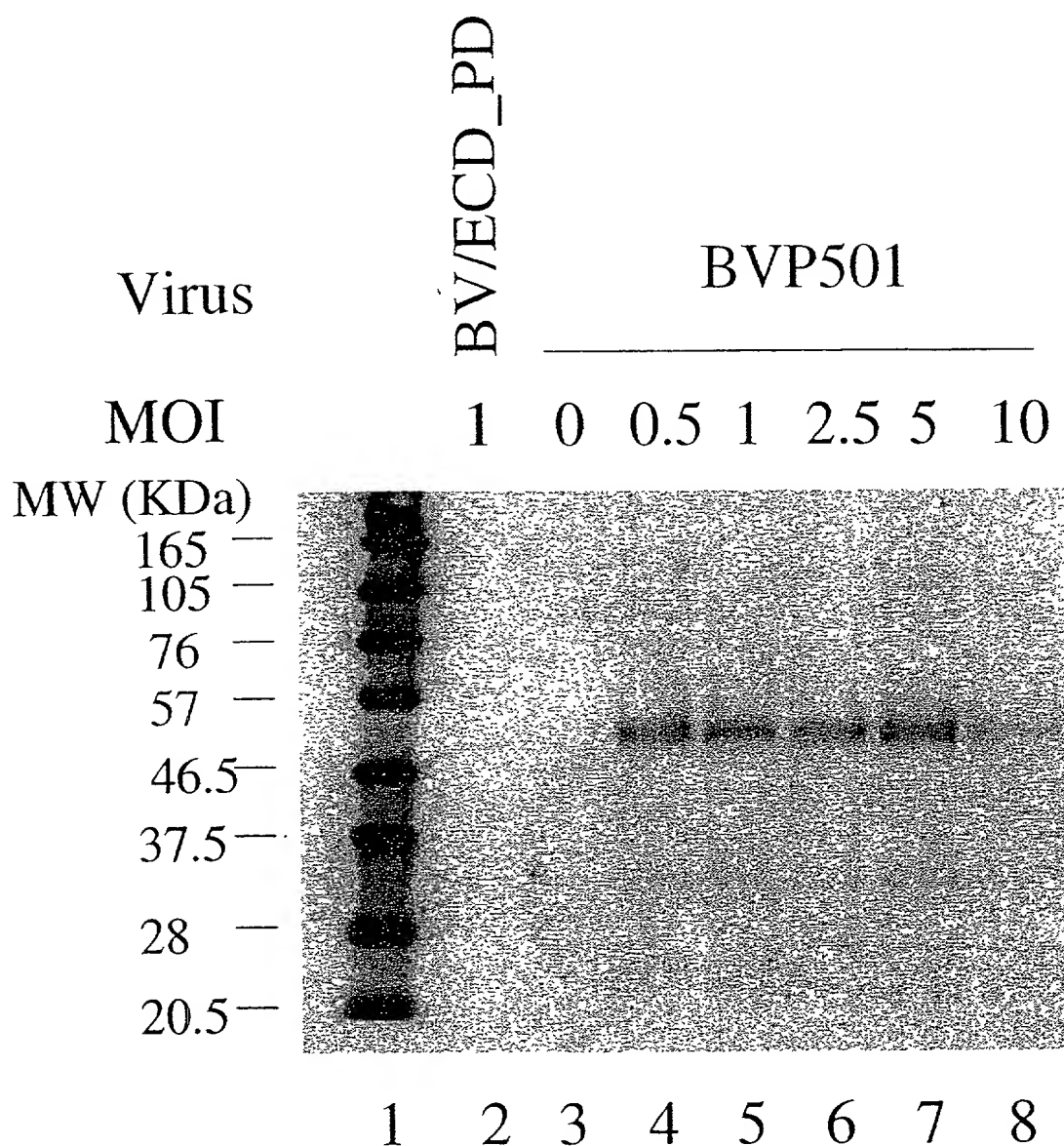


Fig. 6B

Expression of P501S by the Baculovirus Expression System



0.6 million high 5 cells in 6-well plate were infected with an unrelated control virus BV/ECD_PD (lane 2), without virus (lane 3), or with recombinant baculovirus for P501 at different MOIs (lane 4 – 8). Cell lysates were run on SDS-PAGE under the reducing conditions and analyzed by Western blot with a monoclonal antibody against P501S (P501S-10E3-G4D3). Lane 1 is the biotinylated protein molecular weight marker (BioLabs).

Fig. 7

Figure 8. Mapping of the epitope recognized by 10E3-G4-D3

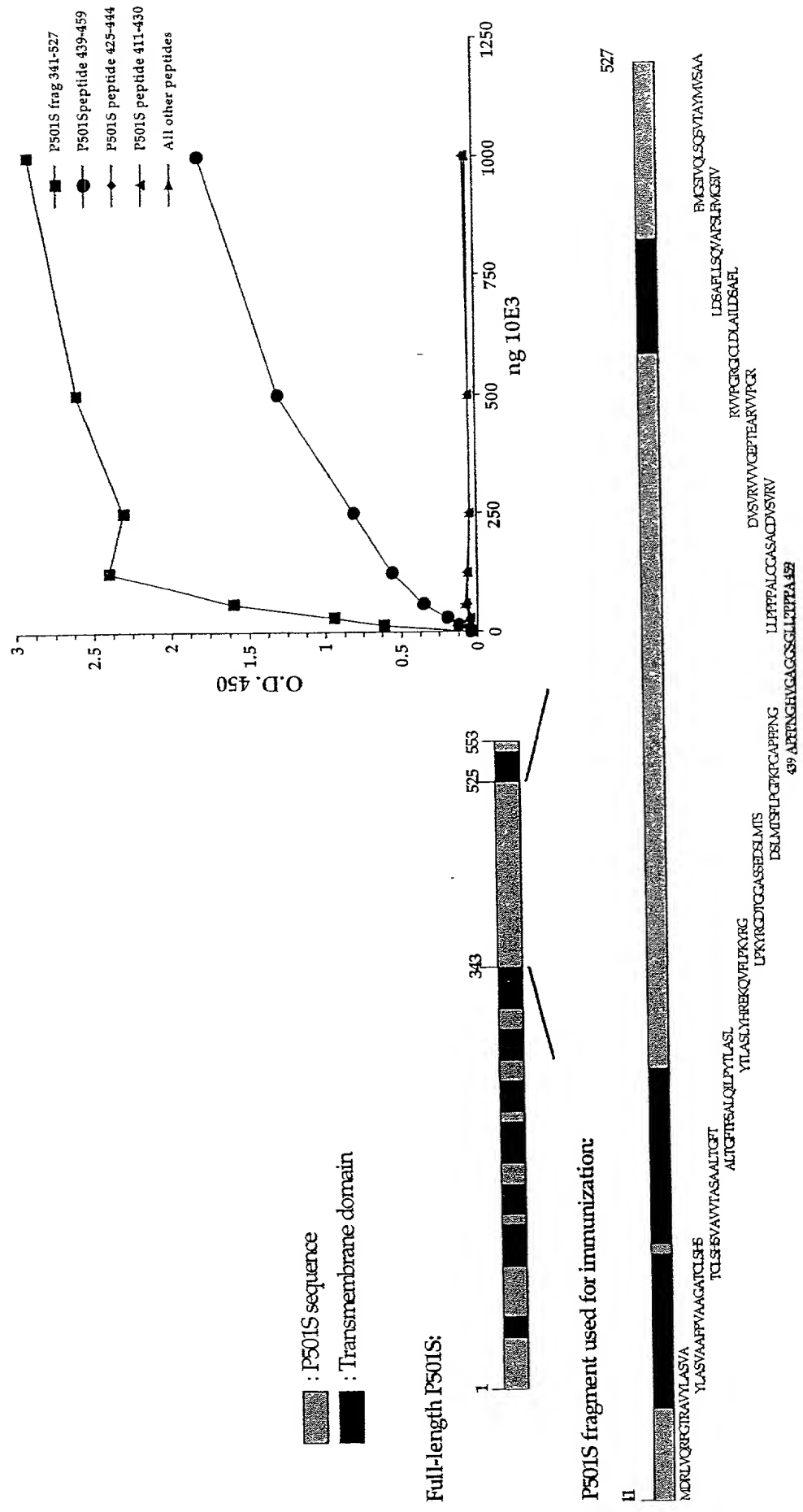


Fig. 8

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Figure 1. Schematic of P501S with predicted transmembrane, cytoplasmic, and extracellular regions

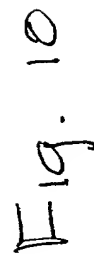
MVQRIAVVYHLLRRK AQLHLYNLLTQGLFYCI AAGHT YVPPH LIEVGVVERIKFM TRIVLGIQPYLGLVCPYLIGSAS
 DWVRGRYRRRP EIWALSLGILLSTFLIPRAGWI AGH CPDPRPI E LAHLLGVGLLDFCCQDYCFITPL
 PALLSLFRDPDHCRQ AYSYVAFHSLGGCTGYETPAI DWDTSATAPVLCETQIE
 CLPGLTLLHLCQVNAATHLY APTVAAGHPPVAGLSAPSSPHTCPGRARAFRNIGAILPRL
 HQLCGRAPRTTR LPVAFHCSYWMANETHTTYDIP YDEGLYQGLVPILAPGTLEARRHIYDEGYR
 MGSILGLFLQCAISLYFSLYNI DRIVQREGTRAVY AS VAAHPYAAQATCLSHSYAYVTA SAA
 LTGHTSALQILPYTLASLY HREKQVFLPKYRGDTGCASSVDSIATSFIDGPKPGAPFPNGHIVGAGGSGL
 APPPPALCGASACDVSVRVVVHEPTEARVVPRG ELLDLMHPSAFLLSQYAPSLF MGSIVQLSQS
 VTAYMYSAAGILGLVLYFAT QVVFDSIAKYSI

Underlined sequence: Predicted transmembrane domain; Bold sequence: Predicted extracellular domain;

italic sequence: Predicted intracellular domain. Sequence in bold/underlined, used to generate polyclonal rabbit serum

Localization of domains predicted using HMMTOP (C.E. Tusnady and I. Simon (1998) Principles

Governing Amino Acid Composition of Integral Membrane Proteins: Applications to topology Prediction.J.Mol Biol. 283, 489-506.



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FIGURE 4. Elisa assay of rabbit polyclonal antibody specificity

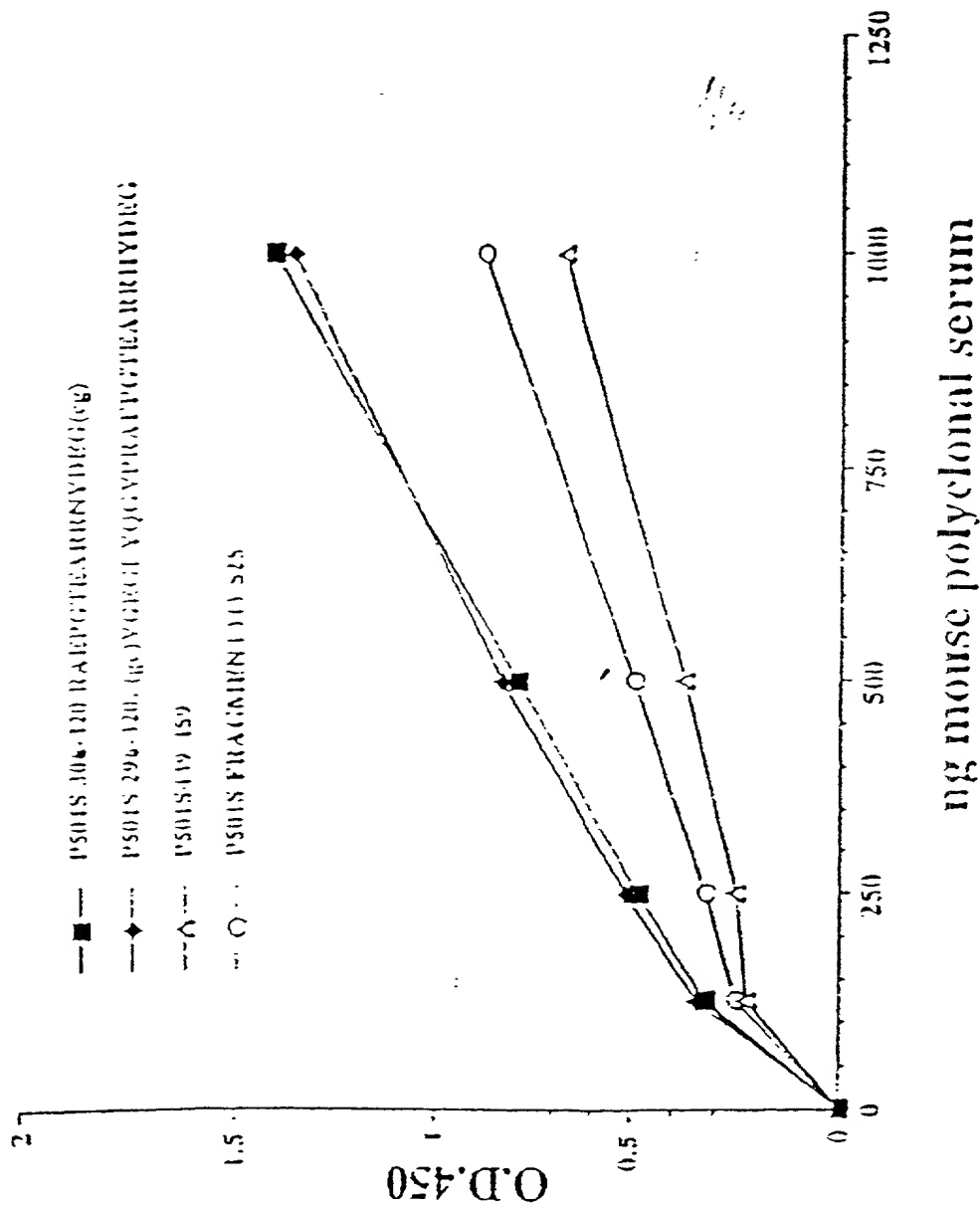


Fig. 11

10 20 30 40 50 60 70
 GTCACCTAGGAAAAGGTGTCTTTTCGGGCAGCCGGGCTCAGCATGAGGAACAGAAGGAATGACACTCTGG 70
 ACAGCACCCCGGACCCTGTACTCCAGCGCGTCTCGAGGCACASACTTGTCTTACACTGAAAGCGACTTGGT 140
 GAATTTTATTC AAGCAAATTTAAGAAACGAGAATGTGTCTTCTTTACCAAAGATTCCAAGGCCACGGAG 210
 AATGTGTGCAAGTGTGGCTATGCCAGAGGCCAGCAGATGGAAGGCACCCAGATCAACCAAAGTGAGAAAT 280
 GGAAGTACAAGAAACACACCAAGGAATTTCTTACGCGAGCCCTTTGGGGATATTCAGTTTGAGACACTGGG 350
 360 370 380 390 400 410 420
 GAAGAAAGGGAAGTATATACGTCTGTCTTGCAGACCGAGCGGAAATCTTTACGAGCTGCTGACCCAG 420
 CACTGGCAGCTGAAAACAACCACTTGGTCAATTTCTGTACCGGGGGCGCCAAGAACTTCGCCCTGAAGC 490
 CGCGCATGCGCAAGATCTTCAGCGGGCTCATCTACATCGCGCAGTCCAAAGGTGCTTGGATTCTCACGGG 560
 AGGCACCCATTATGGCCTGACGAAAGTACATCGGGGAGGTGGTGAGAGATAACACCATCAGCAGGAGTTCA 630
 GAGGAGAATATTGTGGCCATTGGCATAGCAGCTTGGGGCATGGTCTGAAACCGGACACCCCTCATCAGGA 700
 710 720 730 740 750 760 770
 ATGGGATGCTGAGGGCTATTTTTTAGCCCACTACCTTATGGATGACTCACAAGGGATCCACTGTATAT 770
 GCTGGACAACAACACACACATTTGGTGTCTGGTGGAAATGGCTGTATGGACATCCGACTGTGGAAGCA 840
 AAGCTCCGGAAATCAGCTAGAGAAGCATATCTGTGAGCGCACTATTCAGATTCCACTATGGTGGCAAGA 910
 TGGCCATTGTGTGTCTTGGCCAAAGGAGGTGGAAAGAGACTTGAAGGCCATCAATAGCTCCATCAAAA 980
 TAAAAATTCCTTGTGTGGTGGTGGAAAGGCTCGGGCGGGATCGCTGATGTGATCGCTAGCCCTGGTGGAGGT 1050
 1060 1070 1080 1090 1100 1110 1120
 GAGGATGCCCCGACATCTTTCTCCCGTCAAGGAGAAAGTGGTGGCTTTTTTACCCCGCACGGTGTCTCGGC 1120
 TGTCTGAGGAGGAGACTGAGAGTGGATCAAATGGCTCAAGAGAAATCTCGAATGTCTTCACCTATTAA 1190
 AGTTATTAAATGGAAAGAAAGTGGGGATGAAATGTGAGCAATGGCATCTCTACGCTCTATACAAAGCC 1260
 TCAGCACCGAGTGAGCAAGACAAAGGATAACTGGAAATGGGCCTGGAAGCTCTCTGGAATGGAAACAGC 1330
 TGGAGTTAGCCCAATGATGAGATTTCACCAATGACCGCGGATGGGAGTCTGCTGACCTCAAGAAATCAT 1400
 1410 1420 1430 1440 1450 1460 1470
 GTTTACGGCTCTCATAAAGGACAGACCCAAAGTTGTGGCCCTCTTTCTGGAGAATGGCTTGAACCTACGG 1470
 AAGTTTCTCACCCATGATGTCTCACTGAACCTCTCTCCAAAGCACTTCAGCACGCTTGTGTACCGGAATC 1540
 TGCAGATCGCCAAGAATTCCTATAATGATGCCCTCTCTACGCTTGTCTGGAAGCTGGTTGCCAATTCG 1610
 AAGAGGCTTCCGGAAAGGAAGACAGAAATGGCGGGGATGAGATGGACATAGAATCCACGACGTGTCTCT 1680
 ATTACTCGGCAGCCCTTGCAAAGCTCTCTTCACTCGGGCATCTCTCAGAAAGGAAGGAATCTCTCCAAAG 1750
 1760 1770 1780 1790 1800 1810 1820
 TCATTTGGGAGCAGACACAGGGGGCTGCACTCTGSCAGCCCTCGAAGCAAGCTTCTGAAGACTCTGGC 1820
 CAAAGTGAAGACGACATCAATGCTGCTGGGGAGTGGAGGAGCTGGCTAATGAGTAAGGAGACCCGCGCT 1890
 GTTGAGCTGTCACTGAGTGTACAGGACCGATGAGAGACTTGGCAGAACAGCTGCTGGTCTATTCTGTG 1960
 AAGCTTGGGTGGAAAGCAACTGTCTGGAGCTGGGGGTGGAGGAGAGAGACCATTTACCGGCCCAAGC 2030
 TGGGCTCCAGAAATTTCTTTCTAAGCAATGGATGGAGAGATTTCCCGAGACACCAAGAACTGGAAAGAT 2100

Fig. 12A (i)

2110	2120	2130	2140	2150	2160	2170
TCCTGTGTCTGTTTATATACCTTGGTGGGCTGTGGCTTTGTATCATTTAGGAAGAAACCTGTCGACA	2170					
AGCACAAGAAGCTGCTTTGGTACTATGTGGGCTTCTTCACCTCCCGCTTCGTGGTCTTCTCCTGGAATGT	2240					
GGTCTTCTACATCGCCTTCTCTCTGTGTTTCCCTACGTGCTGCTCATGGATTTCCATTCCGGTGCCACAC	2310					
CCCCCGAGCTGCTCTGTACTCCCTGGTCTTTGTCTCTCTGTGATGAAGTCAGACAGTGGTACGTAA	2380					
ATGGGGTGAATTATTTTACTGACCTGTGGAATGTGATGGACACGCTGGGGCTTTTTTACTTCATAGCAGG	2450					
2460	2470	2480	2490	2500	2510	2520
AATTGTATTTCCGCTCCACTCTTCTAATAAAAGCTCTTTGTATCTCTGGACGAGTCATTTCTGTCTGGAC	2520					
TACATTATTTTCACTCTAAGATTGATCCACATTTTACTGTAAGCAGAAACTTAGGACCCAAGATTATAA	2590					
TGCTGCAGAGGATGCTGATCGATGTGTCTTCTCTCTGTCTCTTTGCGGTGTGGATGGTGGCCTTTGG	2660					
CGTGGCCAGGCAAGGGATCTTAGGCAGAAAGCAGGCTGGAGGTGGATATTCCGTTCCGGTCATCTAC	2730					
GAGCCCTACCTGGCCATGTTCCGCCAGGTGCCAGTGACGTGGATGGTACCACGTATGACTTTGCCCACT	2800					
2810	2820	2830	2840	2850	2860	2870
GCACCTTCACTGGGAATGAGTCCAAAGCCACTGTGTGTGGAGCTGGATGAGCACAACCTGCCCGGTTCCC	2870					
CGAGTGGATCACCATCCCGCTGGTGTGCTCTACATGTTATCCACCAACATCCTGCTGGTCAACCTGCTG	2940					
GTGCGCATGTTTGGCTACACGGTGGGCACCGTCCAGGAGAACAAATGACCAAGGTCTGGAAGTTCCAGAGGT	3010					
ACTTCTTGTGTCAGGAGTATGTCAGGCGGCTCAATAACCCCTTCCCGTTCATCTCTTGGCTTACTTCTA	3080					
CATGGTGTGAAGAAGTCTTCAAGTGTGTGTGAAGGAGAAACATGGAGTCTCTGTCTGCTGCTTCT	3150					
3160	3170	3180	3190	3200	3210	3220
AAAAATGAAGACAAATGAGACTCTGGCATGGGAGGGTCTCATGAAGGAAAACCTACCTTGTCTAGATCAACA	3220					
CAAAAACCAACGACACCTCAGAGGAAAATGAGGCACTGCAATTTAGACAACTGGATACAAAGCTTAATGATCT	3290					
CAAGGGCTCTTCTGAAGAGATTGCTAATAAAATCAATTAAGCTGTATGAAGCTCTAATGGAGAAAAGATC	3360					
TAATTATAGCAAGATCATTTAAGGAATGCTGATGAACAAATTTGCTATCGACTACTAAATGASAGATTT	3430					
TCAGACCCCTGGGTACATGGTGGATGATTTAAATCACTTAGTGTGCTGAGACCTTGAGAATAAAGTGT	3500					
3510	3520	3530	3540	3550	3560	3570
CTGATTTGGTTCATACTTGAAGACGGATATAAGGAAGATATTTCTTTTATGTGTTCTCCAGAATGGT	3570					
GGCTGTTTCTCTCTGTGTCTCAATGCTGGGACTGGAGGTGATAGTTTAAGTGTGTCTTTAGCGCCTCC	3640					
TTTTTCTTTTATCTTATTTTGGATGACACAATATAGGAGACATCTATCTATGAATAAGAACCTGG	3710					
CTCATGCTTACTCCTGTATTGTATTGTTCATTTCCAACTGATTCTCTACTTTTCCCTTTTGTATT	3780					
ATGTGACTAATTAGTTGGCATAATGTAAAGTCTCTCAATTAGGCCAGATTCTAAACATGCTGCAGC	3850					
3860	3870	3880	3890	3900	3910	3920
AAGAGGACCCCGCTCTCTTTCAGGAAAAGTGTTCATTTCTCAGGATGCTTCTTACCTGTCAGAGGAGGT	3920					
GACAAAGGCAGTCTCTTGTCTCTTGGACTCAGCAGGCTCTATTGAAGGAACCAACCCCATTCCTAAATA	3990					
TGTGAAAAGTCCGCCAAAATGCAACCTTGAAGGGCACTACTGACTTTGTTCTTATTGGATACTCCTTTA	4060					
TTTATTATTTTCCATTAAAAAATATAGCTGGCTATTATAGAAAATTTAGACCATACAGAGATGTAGAAA	4130					
GAACATAAATTGTCCCATTAACCTTAGGTAACTGCTAACAATTTCTGGATGGTTTTTCAAGTCTAT	4200					
4210	4220	4230	4240	4250	4260	4270
TTTTTTCTATATATGTCTCAATCTCTTTCAAAATTTACAGAAATGTTATCATACTACATATATACTTT	4270					
TTATGTAAGCTTTTTCATAGTATTTTATCAAAATATGTTTTATTATATCATAGCTTCTTAACATT	4340					
ATATCAATTAATGCAATAATAGCAACCTCTAGGGATACCAATAATTTGCTCAATTGAAGGCTATCTCCAG	4410					
TTGATCAATTGGATGAGCATTTGTGTGATGAATGCTATTTGGGTGATTTGGGAAAATTTCCAGGTTAG	4480					
ATTCCAAATAATATCTATTTATTATTAATATTAATATCGATTTATTAATAAACCAATTTATAGGCT	4550					

Fig. 12A(2)

10 20 30 40 50 60 70
 MRNRNDTLDSTRTRYSSASRSTDLSSSEDLVNF!QANFKKRECVFFTKDSKATENVCKCGYAQSQHME 70
 GTQINOSEKWNYYKXHTKEFPTDAFGDIQFETLGKKGXIRLSCDTDAEILYELLTOHWHLKTPLNLVISVT 140
 GGAKNFALKPRMRKIFSRLLIYAQSKGAWILTGGHYGLTKYIGEVVRONTISRSEENIYAIGIAAWGM 210
 VSNRDTLIRNCDAEGYFLAQYLMDDFTROPLYLONNHHTHLLLVDNGCHGHPTVEAKLRNOLEKHISERT 280
 IQDSNYGGKIPYVCFAGGGGKETLKAINTSIKNK!PCVVVEGSGRIADVIAASLVEVEDAPTSSAVKEKLY 350
 360 370 380 390 400 410 420
 RFLPRTVSRLSEETESWIKWLKEILECSHLLTVKMEZAGDEIYSNAISYALYKAFSTSEQDKDNWNGQ 420
 LKLLLEWNOLOLANDEIFTNDRRWESADLOE/MFTALIKDRPKFYRLFLENGLNLRKFLTHOVLTELF SN 490
 HFSTLVYRNLGIAKNSYNDAALLTFVWXLVANFRRGFRKEDRNGRDEMOTELHGVSPITRHPLQALFIWAI 560
 LONKKELSKVIWECTRGCTLAALGASKLLKTLAKVKNDAAGSEELANEYETRAVELFTECYSSOEDL 630
 AEQLLVYSCEAWGGSNCLSLAYEATDQHFTAQPGVONFLSKQWYGEISROTKNWK!ILCLFIIPLVGCGF 700
 710 720 730 740 750 760 770
 VSFRXXPVCKHKKLLWYYVAFFTSPFVVFSSWVVFYIAFLLLFAVLLMDFHSVPHPPPELVLYSLVFVLF 770
 CDEVROWYVNGVNYFTDLWNVMOTLGLFYFIAG:VFRHSSNKSSLYSGRYFCLOYE!IFTLRLIHIFTV 840
 SRNLGPKIIMLORMLIDVFFFLFLFAVWVYAFGVARGGILRONEGRWRWIFRSVIYEPYLAFFGQVPSDV 910
 DGTYYDFAHCTFTGNESKPLCVELDEHNLPRFPEWITEPLVCIYMLSTNILLYNLLVAMFGYTVGTVGEN 980
 NDCVWKFCRYFLVDEYCSRLNIPFPFIVFAYFVWVYKCFKCCCKEKNMESSVCCFKNEDNETLAWEGYM 1050
 1060 1070 1080 1090 1100 1110 1120
 KSNYLVKINTKANOTSEEMRFRFROLDTKLNCLKGLLKEIANKIK. 1096

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Fig. 12B